

Claims

1. A fusion protein of pyrroloquinoline quinone glucose dehydrogenase (PQQGDH) and a cytochrome.
2. The fusion protein according to Claim 1, wherein the PQQGDH is a water-soluble PQQGDH derived from *Acinetobacter calcoaceticus*.
3. The fusion protein according to Claim 1 or 2, wherein the cytochrome has been fused to the C-terminal side of PQQGDH.
4. The fusion protein according to any one of Claims 1 to 3, wherein the cytochrome is cytochrome c or cytochrome B562.
5. The fusion protein according to any one of Claims 1 to 4, wherein the cytochrome is derived from a quinohemoprotein which is a protein having both PQQ and a heme in one molecule.
6. The fusion protein according to any one of Claims 1 to 5, wherein the cytochrome is derived from a quinohemoprotein alcohol dehydrogenase.
7. The fusion protein according to any one of Claims 1 to 6, wherein the cytochrome is derived from quinohemoprotein ethanol dehydrogenase from *Comamonas testosteroni*.
8. The fusion protein according to any one of Claims 1 to 7, which is either (a) or (b):
  - (a) a protein comprising an amino acid sequence represented by SEQ ID NO: 2;
  - (b) a protein comprising an amino acid sequence in which

one or more amino acid residues have been deleted, substituted or added in the amino acid sequence (a) and having a glucose dehydrogenase activity and an electron transfer ability.

9. A gene encoding the fusion protein according to any one of Claims 1 to 8.

10. A vector containing the gene according to Claim 9.

11. A transformant containing the gene according to Claim 9.

12. A transformant in which the gene according to Claim 9 has been integrated into its main chromosome.

13. An enzyme electrode comprising the fusion protein according to any one of Claims 1 to 8 attached thereto.

14. A method of measuring the glucose concentration in a sample comprising the steps of:

contacting the sample with the enzyme electrode according to Claim 13; and

measuring electrons generated from the oxidation of glucose.

15. A glucose sensor comprising an enzyme electrode according to Claim 13 as a working electrode.